

Listing of Claims:

21. (currently amended) A method for detecting network elements relaying communications between a base station and a mobile station in a cellular communication network, said method comprising the steps of:

monitoring time delays associated with communications between base stations and mobile stations; and

~~detecting the determining whether a communication was~~ relayed via at least one of the network elements by detecting an the increase of increased time delay as compared to the a known time delay of mobile stations communicating directly with the base stations station.

22. A method according to claim 21, further comprising the step of:

identifying the communication relaying elements on the ground of communication time delays.

23. A method according to claim 21, wherein the timing advance value corresponding to the said time delay is calculated.

24. A method according to claim 23, wherein the communications with timing advance values greater than some predetermined value are determined to be relayed via at least one of the said elements.

25. A method according to claim 24, wherein the said predetermined value is zero.

Listing of Claims:

Cancel claim 34, without prejudice.

This listing of claims will replace all prior versions and listings of claims in the application:

1. to 20. (canceled)

21. (currently amended) A method for detecting network elements relaying communications between a base station and a mobile station in a ~~cellular~~ mobile communication network, said method comprising ~~the steps of~~:

monitoring time delays associated with communications between base stations and mobile stations; and

~~detecting the determining whether a communication was~~ relayed via at least one of the network elements by ~~detecting an the increase of increased~~ time delay as compared to the a known time delay of mobile stations communicating directly with the base stations station.

22. (currently amended) A method according to claim 21, further comprising ~~the step of~~: identifying the communication relaying elements on the ground of communication time delays.

23. (currently amended) A method according to claim 21, wherein ~~the a~~ timing advance value corresponding to the said time delay is calculated.

24. (previously presented) A method according to claim 23, wherein the communications with timing advance values greater than some predetermined value are determined to be relayed via at least one of the said elements.

25. (previously presented) A method according to claim 24, wherein the said predetermined value is zero.

26. (previously presented) A method according to claim 21, wherein the mobile communication network is a GSM network.

27. (currently amended) A method according to claim 21, further comprising ~~the step of~~: sending an event notice to a network management system, when a presence of at least one of said elements is detected for the first time.

28. (currently amended) A method according to claim 21, wherein the time ~~delay is~~ delays are monitored by a base transceiver station (BTS).

29. (currently amended) A method according to claim 21, wherein the time ~~delay is~~ delays are monitored by a base station controller (BSC).

30. (currently amended) A method according to claim 21, further comprising ~~the step of~~: monitoring the communication relayed via at least one of said elements to determine various parameters giving information about the functioning of the network and said elements.

31. (previously presented) A method according to claim 21, wherein at least one of said elements is a radio repeater.

32. (previously presented) A method according to claim 21, wherein at least one of said elements is an optical tunnelling configuration.

33. (currently amended) A system for detecting network elements relaying communications between a base transceiver station and a mobile station in a mobile cellular communication network, where time delays between base transceiver stations and mobile stations are monitored, the system comprising:

means for monitoring communications between a base transceiver station and a mobile station;

means for detecting ~~communication~~ communications relayed via at least one of the elements by detecting the increase of an increased time delay as compared to the known time delays of mobile stations ~~communicating~~ communicating directly with the base transceiver station.

34. (canceled)

35. (previously presented) A system according to claim 33, wherein the mobile communication network is a GSM network.

36. (previously presented) A system according to claim 33, the system further comprising means for sending an event notice to a network management system when a presence of at least one of said elements is detected for the first time.

37. (previously presented) A system according to claim 33, the system further comprising means for carrying out measurements from the communication relayed via at least one of said elements.

38. (currently amended) A network element for cellular communication networks comprising:

a system relay element detection device for identifying communication relaying elements on the grounds of the by detecting communication time delays between base stations and mobile stations in the cellular communication network.

39. (previously presented) A network element according to claim 38, wherein the network element is a base transceiver station (BTS).

40. (previously presented) A network element according to claim 38, wherein the network element is a base station controller (BSC).

41. (new) The method according to claim 21, wherein the step of determining whether a communication was relayed via at least one of the network elements is performed without requiring any additional monitoring equipment to be located in the network element performing the relaying and without requiring any additional signaling to be generated by the network element performing the relaying.